U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM

9-23

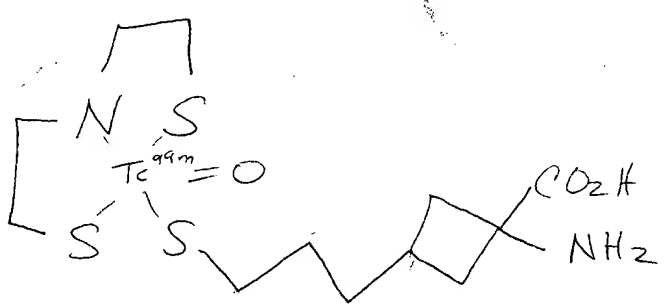
Requestor's Name: LARA KECLEY Serial Number: 8/744,444

Date: 9-2-97 Phone: 8-0450 Art Unit: 1211

Search Topic:
Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).

Please search attached claim 1 wherein a Tc-99m complex is formed. (radioactive technetium)

Elected species is:



23

17
10

STAFF USE ONLY

Date completed: 9-9-97
Searcher: [illegible] x
Terminal time:
Elapsed time:
CPU time:
Total time:
Number of Searches:
Number of Databases:

Search Site
___ STIC
_X_ CM-1
___ Pre-S

Type of Search
___ N.A. Sequence
___ A.A. Sequence
___ Structure
___ Bibliographic

Vendors
___ IG
_X_ STN
___ Dialog
___ APS
___ Geninfo
___ SDC
___ DARC/Questel
___ Other

PTO-1590 (9-90)

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=> d his

     (FILE 'REGISTRY' ENTERED AT 07:41:57 ON 09 SEP 1997)
                DEL HIS Y
                ACT KELLEY/A
               ---------
L1              SCR 1921 AND 1991
L2              STR
L3            5 SEA FILE=REGISTRY SSS FUL L2 AND L1
               ---------
                ACT KELLEY2/A
               ---------
L4              STR
L5              SCR 1568 AND 1838 AND 1929
L6            4 SEA FILE=REGISTRY SSS FUL L4 AND L5
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'REGF' IS NOT A VALID FILE NAME
SESSION CONTINUES IN FILE 'REGISTRY'

=> fil reg
FILE 'REGISTRY' ENTERED AT 08:42:34 ON 09 SEP 1997
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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STRUCTURE FILE UPDATES:  09 SEP  97  HIGHEST RN 193672-56-9
DICTIONARY FILE UPDATES: 09 SEP  97  HIGHEST RN 193672-56-9

TSCA INFORMATION NOW CURRENT THROUGH JUNE 1997

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

=> d que stat l3
L1               SCR 1921 AND 1991
L2               STR
```

Tc compounds

```
   19
    O
    ‖
18  C--------O
    |        20
   Cb--NH2
16    17
```

```
NODE ATTRIBUTES:
CONNECT IS E1  RC AT  20
DEFAULT MLEVEL IS ATOM
GGCAT   IS MCY  SAT  AT  16
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   5

STEREO ATTRIBUTES: NONE
L3            5 SEA FILE=REGISTRY SSS FUL L2 AND L1

100.0% PROCESSED    567 ITERATIONS                          5 ANSWERS
SEARCH TIME: 00.00.02


=> d ide can l3 1-5

L3   ANSWER 1 OF 5  REGISTRY  COPYRIGHT 1997 ACS
RN   191111-50-9  REGISTRY
CN   Technetate(1-)-99Tc, [(1,2,3,4,5-.eta.)-1-[[[5-(3-amino-3-
     carboxylatocyclobutyl)pentyl]amino]carbonyl]-2,4-cyclopentadien-1-
     yl]tricarbonyl-, hydrogen (9CI)  (CA INDEX NAME)
MF   C19 H22 N2 O6 Tc . H
CI   CCS
SR   CA
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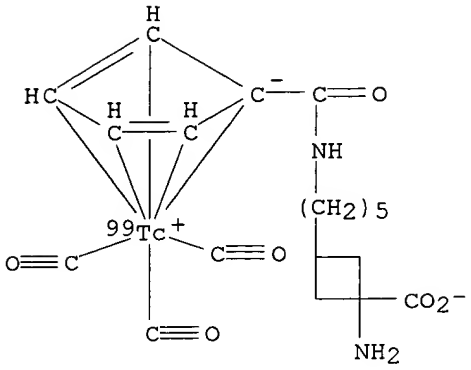
LC STN Files: CA, CAPLUS

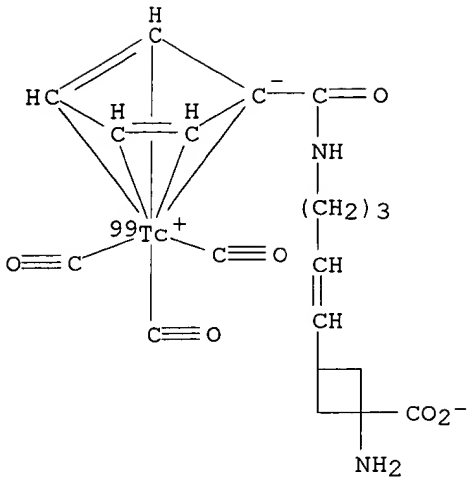


● H^+

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

L3 ANSWER 2 OF 5 REGISTRY COPYRIGHT 1997 ACS
RN 191111-48-5 REGISTRY
CN Technetate(1-)-99Tc, [(1,2,3,4,5-.eta.)-1-[[[5-(3-amino-3-carboxylatocyclobutyl)-4-pentenyl]amino]carbonyl]-2,4-cyclopentadien-1-yl]tricarbonyl-, hydrogen (9CI) (CA INDEX NAME)
MF C19 H20 N2 O6 Tc . H
CI CCS
SR CA
LC STN Files: CA, CAPLUS

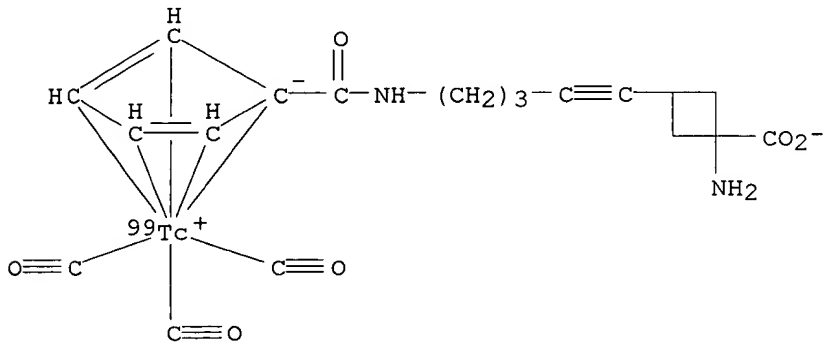


● H^+

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

L3 ANSWER 3 OF 5 REGISTRY COPYRIGHT 1997 ACS
RN 191111-45-2 REGISTRY
CN Technetate(1-)-99Tc, [(1,2,3,4,5-.eta.)-1-[[[5-(3-amino-3-carboxylatocyclobutyl)-4-pentynyl]amino]carbonyl]-2,4-cyclopentadien-1-yl]tricarbonyl-, hydrogen (9CI) (CA INDEX NAME)
MF C19 H18 N2 O6 Tc . H
CI CCS
SR CA
LC STN Files: CA, CAPLUS

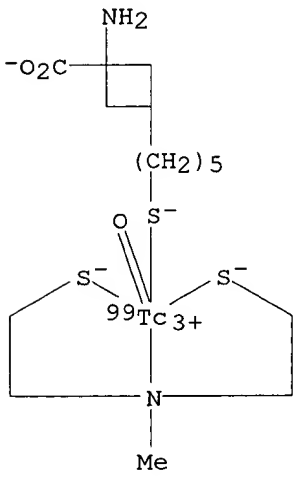


● H^+

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

L3 ANSWER 4 OF 5 REGISTRY COPYRIGHT 1997 ACS
RN 191111-42-9 REGISTRY
CN Technetate(1-)-99Tc, [1-amino-3-[5-(mercapto-.kappa.S)pentyl]cyclobutanecarboxylato(2-)][[2,2'-(methylimino-.kappa.N)bis[ethanethiolato-.kappa.S]](2-)]oxo-, hydrogen (9CI) (CA INDEX NAME)
MF C15 H28 N2 O3 S3 Tc . H
CI CCS
SR CA
LC STN Files: CA, CAPLUS

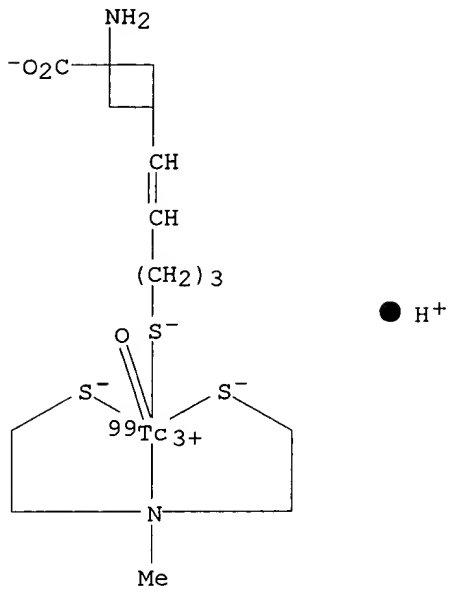


● H^+

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

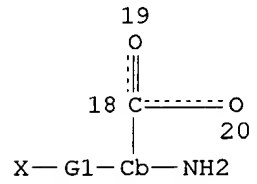
L3 ANSWER 5 OF 5 REGISTRY COPYRIGHT 1997 ACS
RN 191111-39-4 REGISTRY
CN Technetate(1-)-99Tc, [1-amino-3-[5-(mercapto-.kappa.S)-1-pentenyl]cyclobutanecarboxylato(2-)][[2,2'-(methylimino-.kappa.N)bis[ethanethiolato-.kappa.S]](2-)]oxo-, hydrogen (9CI) (CA INDEX NAME)
MF C15 H26 N2 O3 S3 Tc . H
CI CCS
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

=> d que stat l6
L4 STR



REP G1=(1-4) C
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 20
DEFAULT MLEVEL IS ATOM
GGCAT IS MCY SAT AT 16
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 7

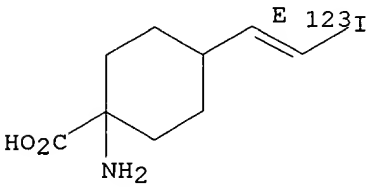
STEREO ATTRIBUTES: NONE
L5 SCR 1568 AND 1838 AND 1929
L6 4 SEA FILE=REGISTRY SSS FUL L4 AND L5

100.0% PROCESSED 54065 ITERATIONS 4 ANSWERS
SEARCH TIME: 00.00.53

=> d ide can l6 1-4

L6 ANSWER 1 OF 4 REGISTRY COPYRIGHT 1997 ACS
RN 191166-85-5 REGISTRY
CN Cyclohexanecarboxylic acid, 1-amino-4-[2-(iodo-123I)ethenyl]-, (E)-
(9CI) (CA INDEX NAME)
FS 3D CONCORD; STEREOSEARCH
MF C9 H14 I N O2
SR CA
LC STN Files: CA, CAPLUS

Double bond geometry as shown.

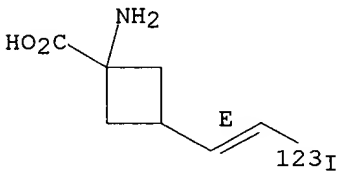


1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

L6 ANSWER 2 OF 4 REGISTRY COPYRIGHT 1997 ACS
RN 191166-78-6 REGISTRY
CN Cyclobutanecarboxylic acid, 1-amino-3-[2-(iodo-123I)ethenyl]-, (E)-
(9CI) (CA INDEX NAME)
FS 3D CONCORD; STEREOSEARCH
MF C7 H10 I N O2
SR CA
LC STN Files: CA, CAPLUS

Double bond geometry as shown.



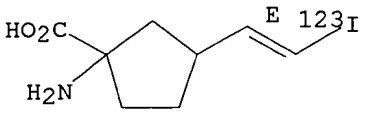
1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

L6 ANSWER 3 OF 4 REGISTRY COPYRIGHT 1997 ACS
RN 191111-21-4 REGISTRY
CN Cyclopentanecarboxylic acid, 1-amino-3-[2-(iodo-123I)ethenyl]-, (E)-
(9CI) (CA INDEX NAME)
FS 3D CONCORD; STEREOSEARCH
MF C8 H12 I N O2

SR CA
LC STN Files: CA, CAPLUS

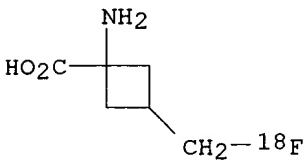
Double bond geometry as shown.



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

L6 ANSWER 4 OF 4 REGISTRY COPYRIGHT 1997 ACS
RN 191110-95-9 REGISTRY
CN Cyclobutanecarboxylic acid, 1-amino-3-(fluoro-18F-methyl)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C6 H10 F N O2
SR CA
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 127:51001

=> fil hcapolus
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SESSION CONTINUES IN FILE 'REGISTRY'

=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 08:43:05 ON 09 SEP 1997
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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FILE COVERS 1967 - 9 Sep 1997 VOL 127 ISS 11
FILE LAST UPDATED: 9 Sep 1997 (970909/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

Improved currency of Japanese patents. See HELP JCURR.

Attention ACS Las Vegas Attendees: Meeting Abstracts for Las Vegas ACS National Meeting Now in CAPLUS!
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> s l3
L7 1 L3

=> s l6
L8 1 L6

=> s l7 or l8
L9 1 L7 OR L8

=> d all l9

L9 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 1997 ACS
AN 1997:436060 HCAPLUS
DN 127:51001
TI Amino acid analogs for tumor imaging
IN Goodman, Mark M.; Shoup, Timothy
PA Emory University, USA
SO PCT Int. Appl., 81 pp.
CODEN: PIXXD2
PI WO 9717092 A1 970515
DS W: AU, CA, JP
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE
AI WO 96-US18455 961108
PRAI US 95-554906 951109
DT Patent
LA English
IC ICM A61K051-00
ICS C07C061-06; C07C061-08; C07C229-00; C07F005-00
CC 34-2 (Amino Acids, Peptides, and Proteins)
Section cross-reference(s): 8, 29
OS MARPAT 127:51001
AB Amino acid analogs R2CyHzC(CH2R1)C(NH2)CO2H [R1 = X (F, I, Br, or their radioisotopes, or At), XCH:CH, haloalkyl, or certain 99mTc-complex contg. residues; R2 = H, haloalkyl, or certain 99mTc-complex contg. residues; y = 1, 2; z = 1-4] were prepd. for use in tumor imaging by positron emission tomog. An esp. preferred amino acid compd. is [18F]-1-amino-3-fluorocyclobutane-1-carboxylic acid (FACBC), which was prepd. from benzyl chloride, epichlorohydrin, and di-Et malonate. The distribution of radioactivity in tumor bearing rats was studied using FACBC.
ST amino acid analog prepn tumor imaging; technetium amino acid prepn tumor imaging
IT Tumor imaging
(amino acid analogs for tumor imaging)
IT Amino acids, preparation
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(analogs; amino acid analogs for tumor imaging)
IT 191110-56-2P
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological

study); PREP (Preparation); USES (Uses)
(amino acid analogs for tumor imaging)

IT 62-56-6, Thiourea, reactions 100-39-0, Benzyl bromide 105-53-3, Diethyl malonate 106-89-8, Epichlorohydrin, reactions 556-52-5, Oxiranemethanol 4746-97-8, 1,4-Dioxaspiro[4.5]decan-8-one 5162-44-7, 4-Bromo-1-butene 14267-92-6, 5-Chloro-1-pentyne 78461-58-2 191110-82-4
RL: RCT (Reactant)
(amino acid analogs for tumor imaging)

IT 1034-49-7P 2930-05-4P 2987-06-6P 13287-42-8P 13807-91-5P 21736-07-2P 22428-87-1P, 1,4-Dioxaspiro[4.5]decan-8-ol 22539-93-1P 54166-15-3P 54307-67-4P 92829-83-9P 191110-48-2P 191110-49-3P 191110-50-6P 191110-51-7P 191110-52-8P 191110-53-9P 191110-54-0P 191110-55-1P 191110-57-3P 191110-58-4P 191110-59-5P 191110-60-8P 191110-61-9P 191110-62-0P 191110-64-2P 191110-65-3P 191110-66-4P 191110-67-5P 191110-68-6P 191110-69-7P 191110-70-0P 191110-71-1P 191110-72-2P 191110-74-4P 191110-75-5P 191110-76-6P 191110-77-7P 191110-78-8P 191110-79-9P 191110-80-2P 191110-83-5P 191110-85-7P 191110-87-9P 191110-89-1P 191110-90-4P 191110-91-5P 191110-92-6P 191110-93-7P 191110-94-8P 191110-97-1P 191110-98-2P 191110-99-3P 191111-01-0P 191111-02-1P 191111-03-2P 191111-04-3P 191111-06-5P 191111-08-7P 191111-09-8P 191111-10-1P 191111-11-2P 191111-14-5P 191111-15-6P 191111-16-7P 191111-18-9P 191111-19-0P 191111-20-3P 191111-22-5P 191111-23-6P 191111-24-7P 191111-27-0P 191111-28-1P 191111-29-2P 191111-31-6P 191111-32-7P 191111-33-8P 191111-34-9P 191111-35-0P 191111-37-2P 191111-38-3P 191111-40-7P 191111-41-8P 191111-43-0P 191111-49-6P 191111-51-0P 191166-74-2P 191166-80-0P 191166-87-7P 191166-89-9P 191166-91-3P 191166-93-5P 191166-94-6P 191166-95-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(amino acid analogs for tumor imaging)

IT 191110-63-1P 191110-73-3P 191110-81-3P **191110-95-9P** 191110-96-0P 191111-00-9P 191111-07-6P 191111-12-3P 191111-13-4P 191111-17-8P **191111-21-4P** 191111-25-8P 191111-26-9P 191111-30-5P 191111-36-1P **191166-78-6P** **191166-85-5P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(amino acid analogs for tumor imaging)

IT 14133-76-7DP, Technetium-99, complexes with aminocyclobutanecarboxylic acid derivs., preparation **191111-39-4P** **191111-42-9P** **191111-45-2P** **191111-48-5P** **191111-50-9P** 191111-51-0DP, complexes with technetium-99 191111-52-1DP, complexes with technetium-99 191166-96-8DP, complexes with technetium-99 191166-97-9DP, complexes with technetium-99
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid analogs for tumor imaging)